THE PLOUGH BOY.

AND JOURNAL OF THE BOARD OF AGRICULTURE.

BY SOLOMON SOUTHWICK.

"He that observeth the wind shall not sow; and he that regardeth the clouds shall not reap."—BUT—"He that tilleth his land shall have plenty of bread."—*Ecclesiastes.*

Vol. I. *ALBANY, SATURDAY, MARCH* 18, 1820. No. 42.

ORIGINAL.

FOR THE PLOUGH BOY.

Peter's Epistles to his Friend.

No. IV.

"An honest man's the noblest work of God."

My dear Friend,

In my last letter I made a pledge which I must now endeavour to redeem: I promised to show that *an intemperate man cannot at the same time be an honest man.*

To a person who has given some thought to this subject, it may seem like trifling to undertake to establish this, in his view, plain position; but, as you are well known to be quite tenacious of the character of an honest man, and which, except on this ground cannot be denied to you, it may reasonably be presumed that you have not very nicely investigated the subject; and that your ideas of the character of an honest man are by far too limited. You will pardon me for supposing them to be those of the unreflecting multitude; who, according to the humiliating opinion of the celebrated Dr. Reid, include ninety-nine in a hundred of mankind. If so, you have plenty of company.

It is believed to be the general idea, that a man is entitled to the appellation of *honest*, who pays his debts, and does not steal, nor defraud his neighbour. But as the self-styled *man of honour* is often the most dishonorable rascal on earth, so this popular definition of an honest man leaves a vast space for the exercise of dishonesty. For without being either a bad pay-master, a thief, or a defrauder, an ingenious fellow may find a great variety of ways to be wicked enough; and with little ingenuity he may be very dishonest.

The idea of honesty, as conveyed in the words of my motto, by a celebrated poet, includes all the duties which we owe to our creator, to our fellow-creatures, and to ourselves; and consequently supposes the exercise of every religious, social and moral virtue. At present, however, we shall consider it only as applicable to the duties we owe to our fellow-creatures. And in this restricted sense, he alone is the truly honest man, who, in all cases does unto others, as in a change of circumstances, he could reasonably wish them to do unto him. With this definition, no such man can find fault; and whoever does, may be excused from any further proof that he is not one. Honesty, therefore, requires the conscientious discharge of every obligation to his fellow-creatures, under which one is laid by his situation in life, as well as by his voluntary engagements. These obligations, with all men in social life, are inevitably numerous. Those of the man in whom are united, the member of society, the husband, and the father, are not only very numerous, but in the highest degree important. For the welfare and happiness of many, depend on the honest fulfilment of them. What, then, can be more evident, than that he, who wilfully or thoughtlessly neglects to fulfil any of these obligations, or voluntarily incapacitates himself for it, justly forfeits his title to the character of an honest man? And if by neglecting his duties a man justly incurs that forfeiture, what shall be said of him, who, instead of performing his duties towards them to whom he is under obligations of the most serious nature, he actually abuses and injures them? There will surely be no question on the subject of whether he is an honest man or not? Such is exactly the case with the intemperate man. He not only inevitably neglects many of the duties which he owes to his country and to his family, but also actually abuses and injures them. To the vicious of every class, this may be applied; but it falls with the greatest weight upon the drunkard.

In every station man owes to the community, at least the example of a good citizen. In what manner the drunkard pays this debt, I need not say. And by every degree that a man's station is raised above the most private and obscure, his obligations to society are increased, in both number and quality. If by the suffrages of his fellow-citizens, or otherwise, he is clothed with the responsibility of public duties, he assumes new obligations, and virtually at least, promises faithfully and honestly to fulfil them; and to honour the station in which he is placed. Can the habitually intemperate man do this?—"A word to the wise is sufficient for them."

But leaving your country and your conscience to decide on your claims to honesty in this respect, I will bring the subject into a narrower compass; and ask you, how stands the account with your wife and children?

To them, I know you allow, and feel yourself, to be under the most solemn obligations. You are fully conscious of owing to them duties, that none but a sober man can discharge; and which, if not discharged, entitles you to another character than that of an honest man.

An intemperate man may, in some respects, be a good husband and father; but he is bound to be so in all respects; which in his case is impossible. His duties to his family are constantly occurring, in rapid and endless succession.—Some of them therefore the drunkard must inevitably omit; and this omission, as inevitably divests him of honesty; as that word supposes the fulfilment, as far as possible, of all duties. But he is guilty of other sins towards his family than the sins of omission. Sins of the most black and aggravated nature. He robs his wife of the inestimable support and comfort of an affectionate,

sober and respectable husband ; and, more cruel than death, which would only leave her widowed, with the widow's comforts—he substitutes, in the place of the prize of which he has robbed her, the loathed carcase of a sot, with all the heavy and mortifying evils that inseparably attend that intolerable burthen. And ah! how far is he from being either an honest, or an honourable man, who thus cruelly abuses the solicited confidence of an amiable and defenceless woman! And to his children, to whom he is bound by the most sacred obligation that the mind can conceive, he is still more cruelly dishonest. He is bound, not alone to supply their present bodily wants, which in general, he shamefully and wickedly neglects ; but he is also bound to rear them up in usefulness, respectability, virtue and happiness. All of which, he is not only as careless as a brute, but holds up to them an example of the most demoralizing tendency, in the person of one who demands their respect! O, for a mark to express the degree of detestation that such an one deserves from every *honest man*! O, my friend, it must not be ; my heart recoils with agony at the idea of your becoming an object of detestation to your most affectionately sincere friend.

PETER.

We cheerfully give place to the essay of PHILOTHEORUS, on simplicity of manners. We understand him to be a young student in a neighbouring college, of pious habits, and possessed of genius ; and we feel disposed to encourage such young writers in their laudable efforts. But when PHILOTHEORUS weilds his juvenile pen against dancing, it will, we fear, fail of its intended effect. Too many grave divines, and moral writers, have already exercised their ingenuity in vain, to wean mankind from the allurements of the ball-room ; and however frivolous those allurements may appear in the eyes of religion and philosophy, it is certain that they will never fail to attract a large portion of the civilized world ; and as to savage tribes, or piscatory and pastoral clans, or societies, they have in all ages derived their chief happiness from dancing to the tunes of their rude instruments, or natural vocal strains : And perhaps this propensity of rude and uncultivated nations to dancing, may be considered as a good reason why refined and civilized nations ought to discard it ; though on the other hand it might be said, that those amusements are most natural, which are most resorted to by man in his natural, uncultivated state. But we are not about to write an essay, and shall therefore leave PHILOTHEORUS to pursue his moral speculations, and shall always be pleased to receive his communications.

FOR THE PLOUGH BOY.

" Ask now of history's authentic page,
" And call up evidence from every age "

COWPER.

Most of the republics which have arisen and fallen, upon the face of the earth, have received their death-wound from the fangs of a bosom-cherished viper. Their days of simplicity and frugality, were their days of strength and glory. But becoming, at length, weary of watching over their liberties, and consenting to slumber in the lap of luxurious indolence, they either slept the sleep of death, or awoke but to feel, in all their horrors, the keen pangs of dissolution. Not thus, however, Switzerland. She preserved her republican manners unadulterated ; and accordingly when the time of her fate arrives, we behold her perish, not the victim of her own venality ; not intimidated by the myriads of foes who poured at once upon her peaceful vales, more terrible and relentless than the devastating avalanches of her own dread precipices ; but prizing their liberties above their lives,

" Scythes for swords her youth did wield,
In that execrable strife ;
Ploughshares in that horrid field,
Bled with slaughter, breathed with life !

* * * * *

Where the dark rocks dimmed the day,
Scowling o'er the deepest dell ;

There, like lions, old in blood,
Lions, rallying round their den,
Albert and his warriors stood,
They were few, but they were men.

Breast to breast they fought the ground,
Arm to arm repelled the foe,
Every motion was a wound,
And a death wes every blow.

* * * * *

One by one gave up the ghost,
Slain, not conquered—they died free !"

Where are we to look for the charm, from the salutiferous power of which proceeded this most romantic courage and devotedness of soul ? Perhaps the following sentence may afford a clue to it : " And sumptuary laws are made *to regulate their dress and diversions*, that they may not become too luxurious and dissipated." Methinks that there is room for the suspicion, at least, that " innocent diversions," (as they are termed by a wonderfully dextrous perversion of language,) as dancing, gaming,&c. are the secret destroyers of the liberties and happiness of a people. The diversions of the republican youth of Switzerland, we find, consisted in such exercises as were calculated to prepare them for the defence of their country. Dancing was very generally discountenanced, and all kinds of gaming, absolutely prohibited by their sumptuary laws. " Heavens !" cry your dashing bucks, and dandy beaux, " why the effect of this economy must doubtless have been to render them the most gloomy and mock-sanctimonious beings upon earth !" O no, my pretty boys, ye are *up a stump* there, to use a homespun phrase. For one writer observes, " The state of society is remarkably happy." Another is in raptures while contemplating " the vineyards and cultivated fields—the richly wooded brow, and the verdant tranquil vales, with its happy cottages and crystal streams." And another says, " The Swiss cottages convey the liveliest images of cleanliness, contentment and simplicity."

The deduction from these facts is very obvious, and I will only detain the gentle reader to inform him that my sensibilities were touched to the quick, the other day, by the perusal of a paragraph in one of the New-York papers, recommending a certain dancing institution, in which, after advancing several flimsy arguments, in favor of the practice, &c. &c. the writer adds for a climax, (or to use another of our expressive homespun phrases, *a cap sheaf*,) that the conductor of the institution is a *native American!* I was shocked. The temperature of my frame suddenly rose, I dare say, some 10° or 15° of Fahrenheit. What! said I, can a native American degrade the noble character which he inherits as a birthright, to become a fiddling, frisking dandy. Incredible. " *Peregrinam insolentiam fugere discamus.*

PHILOTHEORUS.

Horses.

We are indebted to an obliging correspondent, at Bristol, R. I. for the following extracts from an old number of the *National Intelligencer.*— Having ever considered the Horse as among the noblest of brate animals, we have not been inattentive to him in our editorial arrangements, and have accordingly collected several interesting articles in relation to the different breeds of that animal—their habits, disorders, &c. to which in due season, we shall devote a portion of our columns. In the mean time we thank our Bristol friend for the following extracts, and assure him that any further communications, he may think proper to make, will be gratefully received.

FROM THE NATIONAL INTELLIGENCER.

TO THE BREEDERS OF HORSES.

As horses begin to breed at three or four years old, and continue till they are twenty or thirty,

and as they are not killed for food, except among the Tartars and some other savages, they would overrun the world if the Almighty had not provided modes of destroying them.

Wherever the poor animals are subjected to the use of man, they suffer so much abuse and ill usage, that they seldom increase too rapidly; but where they are better treated, and turned into good pastures, a species of fly, resembling the drone of the common honey bee, deposits its eggs or nits on the legs, necks, manes, sides, but particularly on the fore-legs of the horse, and especially on the inside of the knees, as if intended to be placed in a situation where they would be most likely to be effectual. These are deposited during the months of August, September and October, through a conical tube, as the fly suspends itself by the action of its wings; and in these months the horses shed their coats, and the hair dropping into the grass, these nits or eggs are thus taken into their stomachs; besides, while they are eating, flies and other insects frequently tickle their legs, and the horses rub them and their knees with their teeth or lips, and often while the food is in their mouths, the hairs and nits stick to it, and are swallowed with their food. The gluten, which sticks the nits so tenaciously to the hair, sticks them also to the coats of the horse's stomach, where they gradually increase by absorption, and remain till they can attach themselves to the stomach by a proboscis, surrounded by small hairs, which renders them firm and difficult of removal. These are called botts, or grub-worms. They are about the thickness of a large goose quill, but short, with hairy tough skins. They remain attached to the stomach till the spring of the year, and are fatal according to circumstances. If the horses are fed with food which by fermentation, occasions a noxious effluvium, the grub-worm forces itself deeper, or if the horses are fat, it goes deeper to reach the nutrition derived from the vessels, and, in either case, if it perforates the stomach. the horses die suddenly. When the grub-worm is matured, it is always voided, unless fatal, and it lies in a torpid state for about three weeks, when it produces the fly again, ready for the propagation of another brood. I counted the eggs or nits in one of these flies, which I caught laying its eggs, (but appearing plump, it might not have laid many) and found about five hundred. It may, therefore, be taken for granted, that they lay about five or six hundred eggs. When a horse dies with these insects, his stomach will be found sometimes to have patches of hundreds of them, sticking nearly close together; and the carcase is dragged into the commons, where it is eaten up by the vultures, dogs, &c. but the contents of the stomach and intestines are seldom molested. These grub-worms there come to perfection, and the consequence is, that millions of nits are laid by the flies for further mischief; to prevent which, as soon as the vultures, dogs, &c. have eaten as much of the animal as they can, and little remains except the contents of the stomach and intestines, it would be proper to lay on a quantity of brush-wood and burn it up, by which you would effectually destroy what would in a few days more produce millions of nits, and consequently of fatal enemies.

These grub-worms are with so much difficulty detached from the stomach, and when detached, so difficultly killed, that they may be considered as the most dangerous enemy of the horse. It is, therefore, necessary to point out the mode of preventing them from entering into the stomach, and not depend upon any nostrums for the cure of what can certainly and effectually be prevented; for horses frequently die after every attempt is made to cure them, and nothing has yet been discovered that will effectually kill the grub-worm in certain stages of its existence, without risking the life of the horse, nor even then. The only efficient mode of prevention is to SCRATCH OFF THE NITS FROM EVERY PART OF THE HORSE ONCE A WEEK, or at the utmost, once a fortnight; but once a week is the safest, and may be depended upon. This should be done on a dung-hill, and the nits covered: but if any should happen to fall on the dung-hill where they would not be covered, as horses are remarkably cleanly in their food, they would not be likely to eat grass where there would be danger. But if they should be scraped off in a pasture, they would surely be very dangerous, because the horses would eat the grass with the nits thereon; and it is absolutely necessary to be very cautious in this point. The plough and waggon horses, and colts ought all to be scraped once a week in the same manner, otherwise the nits falling from their legs and bodies, when they shed their coats or hair, will endanger the whole. If these precautions be attended to during the season while the flys are laying their eggs, there will be no danger of any of them dying by the grub-worm; but if unfortunately these precautions should not have been attended to, and in the spring of the year, or during the summer, the animals should shew any symptoms of worms, by restlessness, by turning their heads to their sides, and often changing their postures, by switching their tails without any visible causes, by rubbing their tails against the sides of the stable or elsewhere, it will be well to give them at night, according to their ages and strength, a dose of calomel; for the largest and strongest, two drachms, made up into a ball with flour and a little molasses, working it off next morning by the following dose: for a large horse, aloes in powder, eight drachms, ginger in powder, half an ounce, oil of aniseeds, sixty drops, molasses enough to make it into a mass, which must be given on an empty stomach, and let the horse fast an hour after, giving him no cold water to drink, but let it be a little warm, with a handful of bran or meal in it. In about five or six days, give another dose, night and morning, in the same manner, and observe if any grub-worms or botts be voided, taking care to kill such as are found. Two or three doses are requisite to remove all danger, for sometimes worms detach themselves more easily from the stomach than at other times, according to their ages.

If the horse shew symptoms of worms, but without violence, a drench of two or three quarts of new milk, sweetened with molasses, given by degrees, in the evening, will sometimes so detach the grub-worms from the stomach, by furnishing them with a sweet nutritious fluid, with which they will gorge themselves, that a gentle purge will next morning bring away handfuls of them; and this may be repeated occasionally. But if the horse shew violent symptoms, by trying to bite his sides, and should throw himself on the ground and roll, and get up and lie down often, especially in the spring of the year or summer, he is in great danger, and a drench, composed of a pint of molasses and the same quantity of spirit or whiskey, with two quarts of warm water given immediately, and repeated two or three or four times, or even more, will sometimes give relief, by gorging or intoxicating the worms, and obliging them to quit their hold: but the case is desperate, and generally fatal. Some persons crumble into the food of their horses a little dried tobacco, every week; others give as much Indigo as will lay on a quarter of a dollar: but these things are given generally by waggoners, whose horses are seldom troubled with the grub-worm; for nits are not laid on horses that are stabled, and those in waggons are fed in troughs, and reined up when at work: therefore they may attribute the safety of their horses to improper causes. Salt should be given to all horses, and indeed to all kinds of cattle, as well as sheep, at least twice a week, as it tends to assist in their digestion, to create an appetite, to destroy worms, and is so generally beneficial, that when in a state of nature, animals will travel great distances to salt-licks, or to the sea-coast, for this essential article. Besides grub-worms or botts, horses are affected by other worms, which they get by drinking ditch or pond water, wherein various insects lay their eggs. The amphisbæna aquatica, which is a foot or more in length, and so much like a hair as to be supposed by the ignorant to be produced thereby, is common in the newly cut ditches of the meadows of this country.

W. T.

City of Washington, Aug. 24, 1817.

Founder in horses.—It is said the following receipt will cure the most severe founder in horses. Take a large handful of sun-flower seed, bruise and mix it in any kind of feed the horse is accustomed to; he will eat it without reluctance; two feeds will perform a cure.

TO THE LOVERS OF GOOD FRUIT.

Now is the time to examine the roots and the lower part of the stems of your fruit trees, where you will find the worms full grown, and ready to turn into the chrysalis state. You will also find the chrysalis in a case or covering formed with earth and gum, or gluten, lying in numbers round the stems of the trees, just under the surface of the ground, or at the places where the gum has issued from the trees by the perforations of the grubs. They lie in the chrysalis state about three weeks, when they take wing, and from one female I counted 678 eggs! Judge then, if suffered to escape, what destruction is preparing for your young trees and fruit; for some lay their eggs on the bark of the trees, and some on the fruit. The young worms pierce in and destroy both. There is not a day to be lost, for now is the time to destroy them, or they will destroy your future prospects. W. T.

City of Washington, Aug. 24, 1817.

SELECTIONS.

Agricultural Chemistry,

No. XXXI.

BY HUMPHREY DAVY.

VARIOUS REMARKS ON PLANTS.

[204] I have reasoned, in a former part of this Lecture, against the close analogy which some persons have assumed between the absorption of oxygene and the formation of carbonic acid gas in germination, and in the respiration of the fœtus. Similar arguments will apply against the pursuit of this analogy between the functions of the leaves of the adult plant, and those of the lungs of the adult animal. Plants grow vigorously only when supplied with light; and most species die if deprived of it. It cannot be supposed that the production of oxygene from the leaf, which is known to be connected with its natural colour, is the exertion of a diseased function, or that it can acquire carbon in the day time, when it is in most vigorous growth, when the sap is rising, when all its powers of obtaining nourishment are exerted; merely for the purpose of giving it off again in the night, when its leaves are closed, when the motion of the sap is imperfect, and when it is in a state approaching to that of quiescence. Many plants that grow upon rocks, or soils, containing no carbonic matter, can only be supposed to acquire their charcoal from the carbonic acid gas in the atmosphere; and the leaf may be considered at the same time as an organ of absorption, and an organ in which the sap may undergo different chemical changes.

When pure water only is absorbed by the roots of plants, the fluid, in passing into the leaves, will probably have greater [205] power to absorb carbonic acid from the atmosphere, when the water is saturated with carbonic acid gas, some of this substance, even in the sunshine, may be given off by the leaves; but a part of it likewise will be always decomposed, which has been proved by the experiments of M. Sennebier.

When the fluid taken up by the roots of plants contains much carbonaceous matter, it is probable that plants may give off carbonic acid from their leaves, even in the sunshine. In short, the function of the leaf must vary according to the composition of the sap passing through it. When sugar is to be produced, as in early spring at the time of the developement of buds and flowers, it is probable that less oxygene will be given off, than at the time of the ripening of the seed, when starch, or gums, or oils, are formed; and the process of ripening the seed usually takes place when the agency of the solar light is most intense. When the acid juices of fruits become saccharine in the natural process of vegetation, more oxygene, there is every reason to believe, must be given off, or newly combined, than at other times; for, as it was shewn in the third Lecture, all the vegetable acids contain more oxygene than sugar. It appears probable, that in some cases, in which oily and resinous bodies are formed in vegetation, water may be decomposed; its oxygene set free, and its hydrogene absorbed.

I have already mentioned, that some plants produce oxygene in pure water; Dr. Ingenhousz found this to be the case with species of the conferva; I have tried the leaves of many [206] plants, particularly those that produce volatile oils.—When such leaves are exposed in water saturated with oxygene gas, oxygene is given off in the solar light; but the quantity is very small and always limited; nor have I been able to ascertain with certainty, whether the vegetative powers of the leaf were concerned in the operation, though it seems probable. I obtained a considerable quantity of oxygene in an experiment made fifteen years ago, in which vine leaves were exposed to pure water; but on repeating the trial often since, the quantities have always been very much smaller; I am ignorant whether this difference is owing to the peculiar state of the leaves, or to some confervæ which might have adhered to the vessel, or to other sources of fallacy.

The most important and most common products of vegetables, mucilage, starch, sugar, and woody fibre, are composed of water, or the elements of water in their due proportion, and charcoal; and these, or some of them, exist in all plants; and the decomposition of carbonic acid, and the combination of water in vegetable structures, are processes which must occur almost universally.

When glutenous and albuminous substances exist in plants, the azote they contain may be suspected to be derived from the atmosphere; but no experiments have been made which prove this; they might easily be instituted upon mushrooms and fungusses.

In cases in which buds are formed, or shoots thrown forth from roots, oxygene appears to be uniformly absorbed, as in the germination of seeds. I exposed a small potatoe moistened [207] with common water to 24 cubical inches of atmospherical air, at a temperature of 59 d. It began to throw forth a shoot on the third day; when it was half an inch long I examined the air; nearly a cubical inch of oxygene was absorbed, and about three-fourths of a cubical inch of carbonic acid formed. The juices in the shoot separated from the potatoe, had a sweet taste; and the absorption of oxygene, and the production of carbonic acid, were probably connected with the conversion of a portion of starch into sugar. When potatoes that have been frozen are thawed, they become sweet; probably oxygene is absorbed in this process; if so, the change may be prevented by thawing them out of the contact of air, under water, for instance, that has been recently boiled.

In the tillering of corn, that is, the production of new stalks round the original plume, there is every reason to believe that oxygene must be absorbed; for the stalk at which the tillering takes place, always contains sugar, and the shoots arise from a part deprived of light. The drill husbandry favours this process; for loose earth is thrown by hoeing round the stalks; they are preserved from light, and yet supplied with oxygene. I have counted from forty to one hundred and twenty stalks, produced from a grain of wheat, in a moderately good crop of drilled wheat. And we are informed by Sir Kenelm Digby, in 1660, that there was in the possession of the Fathers of the Christian Doctrine at Paris, a plant of barley which they, at that time, kept by them as a curiosity, and which consisted of 249 stalks springing from one root, or grain; and in which they counted above 18,000 grains, or seeds of barley.

[208] The great increase which takes place in the transplantation of wheat, depends upon the circumstance, that each layer thrown out in tillering may be removed, and treated as a distinct plant. In the Philosophical Transactions, V LVIII, p. 203, the following statement may be found:—Mr. C. Miller, of Cambridge, sowed some wheat on the 2d of June, 1766; and on the 8th of August, a plant was taken and separated into 18 parts, and replanted; these plants were again taken up, and divided in the months of September and October, and planted separately to stand the winter, which division produced 67 plants. They were again taken up in March and April, and produced 500 plants: the number of ears thus formed from one grain of wheat was 21,109, which gave three pecks and three quarts of corn that weighed 47lbs. 7ozs. and that were estimated at 576,840 grains.

It is evident from the statements just given, that the change which takes place in the juices of the leaf by the action of the solar light, must tend to increase the proportion of inflammable matter to their other constituent parts. And the leaves of the plants that grow in darkness, or in shady places, are uniformly pale; their juices are watery and saccharine, and they do not afford oils or resinous substances. I shall detail an experiment on this subject.

I took an equal weight, 400 grains, of the leaves of two plants of endive, one bright green, which had grown fully exposed to light, and the other almost white, which had been secluded from light by being covered with a box; after being [209] both acted upon for some time by boiling water, in the state of pulp, the undissolved matter was dried, and exposed to the action of warm alcohol. The matter from the green leaves gave it a tinge of olive; that from the pale leaves did not alter its colour. Scarcely any solid matter was produced by evaporation of the alcohol that had been digested on the pale leaves; whereas by the evaporation of that from the green leaves, a considerable residuum was obtained, five grains of which were separated from the vessel in which the evaporation was carried on; they burnt with flame, and appeared partly matter analogous to resin. 53 grains of woody fibre were obtained from the green leaves, and only 31 from the pale leaves.

It has been mentioned in the Third Lecture, that the sap probably, in common cases, descends from the leaves into the bark; the bark is usually so loose in its texture, that the atmosphere may possibly act upon it in the cortical layers; but the changes taking place in the leaves, appear sufficient to explain the difference between the products obtained from the bark and from the alburnum: the first of which contains more carbonaceous matter than the last.

When the similarity of the elements of different vegetable products is considered, according to the views given in the Third Lecture, it is easy to conceive how the different organized parts may be formed from the same sap, according to the manner in which it is acted on by heat, light, and air. By the abstraction of oxygene, the different inflammable products, [210] fixed and volatile oils, resins, camphor, woody fibre, &c. may be produced from saccharine or mucilaginous fluids; and by the abstraction of carbon and hydrogene, starch, sugar, the different vegetable acids and substances soluble in water, may be formed from highly combustible and insoluble substances. Even the limpid volatile oils which convey the fragrance of the flower, consist of different proportions of the same essential elements, as the dense woody fibre; and both are formed by different changes in the same organs, from the same materials, and at the same time.

M. Vauquelin has lately attempted to estimate the chemical changes taking place in vegetation, by analysing some of the organized parts of the horse-chesnut in their different stages of growth. He found in the buds collected, March 7, 1812, tanning principle, and albuminous matter capable of being obtained separately, but when obtained, combining with each other. In the scales surrounding the buds, he found the tanning principle, a little saccharine matter, resin, and a fixed oil. In the leaves fully developed, he discovered the same principles as in the buds; and in addition, a peculiar green resinous matter. The petals of the flower yielded a yellowish resin saccharine matter, albuminous matter, and a little wax: the stamina afforded sugar, resin, and tannin.

The young chesnuts examined immediately after their formation, afforded a large quantity of a matter which appeared to be a combination of albuminous matter and tannin. All the parts of the plant afforded saline combinations of the acetic and phosphoric acids.

[211] M. Vauquelin could not obtain a sufficient quantity of the sap of the horse-chesnut for examination; a circumstance much to be regretted; and he has not stated the relative quantities of the different substances in the buds, leaves, flowers, and seeds. It is probable, however, from his unfinished details, that the quantity of resinous matter is increased in the leaf, and that the white fibrous pulp of the chesnut is formed by the mutual action of albuminous and astringent matter, which probably are supplied by different cells or vessels. I have already mentioned [p. 131] that the cambium, from which the new parts of the trunk and the branches appear to be formed, probably owes its power of consolidation to the mixture of two different kinds of sap; one of which flows upwards from the roots; and the other of which probably descends from the leaves. I attempted, in May, 1804, at the time the cambium was forming in the oak, to ascertain the nature of the action of the sap of the alburnum upon the juices of the bark. By perforating the alburnum in a young oak, and applying an exhausting syringe to the aperture, I easily drew out a small quantity of sap. I could not, however, in the same way obtain sap from the bark. I was obliged to recur to the solution of its principles in water, by infusing a small quantity of fresh bark in warm water; the liquid obtained in this way was highly coloured and astringent; and produced an immediate precipitate in the alburnous sap, the taste of which was sweetish, and slightly astringent, and which was colourless.

[212] The increase of trees and plants must depend upon the quantity of sap which passes into the organs upon the quality of this sap; and on its modification by the principles of the atmosphere. Water, as it is the vehicle of the the nourishment of the plant, is the substance principally given off by the leaves. Dr. Hales found, that a sunflower, in one day of twelve hours, transpired by its leaves one pound fourteen ounces of water, all of which must have been imbibed by its roots.

OF THE ASCENT OF THE SAP.

The powers which cause the ascent of the sap have been slightly touched upon in the second and third Lectures. The roots imbibe fluids from the soil by capillary attraction; but this power alone is insufficient to account for the rapid elevation of the sap into the leaves. This is fully proved by the following fact detailed by Dr. Hales, Vol. I. of the Vegetable Statics, page 114. A vine branch of four or five years old was cut through, and a glass tube carefully attached to it; this tube was bent as a siphon, and filled with quicksilver; so that the force of the ascending sap could be measured by its effect in elevating the quicksilver. In a few days it was found, that the sap had been propelled forwards with so much force as to raise the quicksilver to 38 inches, which is a force considerably superior to that of the usual pressure of the atmosphere.—Capillary attraction can only be exerted by the surfaces of small vessels, and can never raise a fluid into tubes above the vessels themselves.

[213] I referred in the beginning of the Third Lecture to Mr. Knight's opinion, that the contractions and expansions of the silver grain in the alburnum, are the most efficient cause of the ascent of the fluids contained in its pores and vessels. The views of this excellent physiologist are rendered extremely probable by the facts he has brought forward in support of them. Mr. Knight found that a very small increase of temperature was sufficient to cause the fibres of the silver grain to separate from each other, and that a very slight diminution of heat produced their contraction. The sap rises most vigorously in spring and autumn, at the time the temperature is variable; and if it be supposed, that in expanding and contracting, the elastic fibres of the silver grain exercise a pressure upon the cells and tubes containing the fluid absorbed by the capillary attraction of the roots, this fluid must constantly move upwards towards the points where a supply is needed.

The experiments of Montgolfier, the celebrated inventor of the balloon, have shewn that water may be raised almost to an indefinite height by a very small force, provided its pressure be taken off by continued divisions in the column of fluid. This principle, there is great reason to suppose, must operate in assisting the ascent of the sap in the cells and vessels of plants which have no rectilineal communication, and which every where oppose obstacles to the perpendicular pressure of the sap.

The changes taking place in the leaves and buds, and the degree of their power of transpiration, must be intimately [214] connected likewise with the motion of the sap upwards. This is shewn by several experiments of Dr. Hales.

A branch from an apple tree was separated and introduced into water and connected with a mercurial gage. When the leaves were upon it, it raised the mercury by the force of the ascending juices to four inches; but a similar branch, from which the leaves were removed, scarcely raised it a quarter of an inch.

Those trees, likewise, whose leaves are soft and of a spongy texture, and porous at their upper surfaces, displayed by far the greatest powers with regard to the elevation of the sap.

The same accurate philosopher whom I have just quoted, found that the pear, quince, cherry, walnut, peach, gooseberry, water elder and sycamore, which have all soft and unvarnished leaves, raised the mercury under favourable circumstances from three to six inches. Whereas the elm, oak, chesnut, hazel, sallow, and ash, which have firmer and more glossy leaves, raised the mercury only from one to two inches. And the evergreens and trees bearing varnished leaves, scarcely at all affected it; particularly the laurel and the laurustinus.

OF THE DESCENT OF THE SAP.

It will be proper to mention the facts which shew, that in many cases fluids descend through the bark; they are not of the same unequivocal nature as those which demonstrate the ascent of the sap through the alburnum; yet many of them are satisfactory.

[215] M. Baisse placed branches of different trees in an infusion of madder, and kept them there for a long time. He found in all cases, that the wood became red before the bark; and that the bark began to receive no tinge till the whole of the wood was coloured, and till the leaves were affected; and that the colouring matter first appeared above, in the bark immediately in contact with the leaves.

Similar experiments were made by M. Bonnet, and with analogous results, though not so perfectly distinct as those of M. Baisse.

Du Hamel found, that in different species of the pine, and other trees, when strips of bark were removed, the upper part of the wound only emitted fluid, whilst the lower part remained dry.

This may likewise be observed in the summer in fruit trees, when the bark is wounded, the alburnum remaining untouched.

I have mentioned in the Third Lecture, that when new bark is formed to supply the place of a ring that has been stripped off, it first makes its appearance upon the upper edge of the wound, and spreads slowly downwards; and no new matter appears from below rising upwards, if the experiment has been carefully performed. I say carefully performed; because, if any of the interior cortical layer be suffered to remain communicating with the upper edge, new bark, covered with epidermis, will form below this, and appear as if protruded upon the naked alburnum, and formed within the wound; and such a circumstance would give rise to erroneous conclusions.

[216] In the summer of 1804, I examined some elms at Kensington. The bark of many of them had been very much injured, and in some cases more than a square foot had been stripped off. In most of the wounds the formation of the new cortical layers was from above, and gradually extending downwards round the aperture; but in two instances there had been very distinctly a formation of bark towards the lower edge. I was at first very much surprised at this appearance, so contradictory to the general opinion; but on passing the point of a pen-knife along the surface of the alburnum, from below upwards, I found that a part of the cortical layer, which was of the colour of the alburnum, had remained communicating with the upper edge of the wound, and that the new bark had formed from this layer. I have had no opportunity of looking at the trees lately; but I doubt not that the phenomenon may still be observed; for some years must elapse before the new formations will be complete.

In accounting for the experiment of M. Palisot de Beauvois, mentioned in the Third Lecture, it may be supposed that the cortical fluid flowed down the alburnum upon the insulated bark, and thus occasioned its increase; or it may be conceived that the bark itself contained sufficient cortical fluid at the time of its separation to form new parts by its action upon the alburnous fluid.

The motion of the sap through the bark seems principally to depend upon gravitation. When the watery particles have been considerably dissipated by the transpiring functions of

[217] the leaves, and the mucilaginous, inflammable, and astringent constituents, increased by the agency of heat, light, and air, the continued impulse upwards from the alburnum, forces the remaining inspissated fluid into the cortical vessels, which receive no other supply. In these, from its weight, its natural tendency must be to descend; and the rapidity of the descent must depend upon the general consumption of the fluids of the bark in the living processes of vegetation for there is every reason to believe, that no fluid passes into the soil through the roots: and it is impossible to conceive a free lateral communication between the absorbent vessels of the alburnum in the roots, and the transporting or carrying vessels of the bark; for if such a communication existed, there is no reason why the sap should not rise through the bark as well as through the alburnum; for the same physical powers would then operate upon both.

Some authors have supposed that the sap rises in the alburnum, and descends through the bark in consequence of a power similar to that which produces the circulation of the blood in animals; a force analogous to the muscular force in the sides of the vessels.

AN ESSAY

On the Management of Bees,

With an account of some curious facts in their History.—By Dr. James Howison, *of Hillend.*

From the transactions of the Caledonian Horticultural Society.

It being my intention to describe to the Society the management of a single hive of bees, from their swarming until they themselves have sent forth their first colony, I shall remark on the different operations as they naturally succeed each other, according to the method now in general use; leaving that followed by me, of taking the honey without killing the bees, to be explained under a distinct head.

Variety of Bees.—To the common observer, all working bees, as to external appearance, are nearly the same; but to those who examine them with attention, the difference in size is very distinguishable; and they are in their vicious and gentle, indolent and active natures, essentially different.

Of the stock which I had in 1810, it required 250 to weigh an ounce; but they were so vicious and lazy, that I changed it for a smaller variety, which possesses much better dispositions, and of which it requires 296 on an average to weigh an ounce. Whether size and disposition are invariably connected, I have not yet had sufficient experience to determine.

Materials and size of Hives.—Hives made of straw, as now in use, have a great advantage over those made of wood or other materials, from the effectual defence they afford against the extremes of heat in summer, and cold in winter. That the hives in size should correspond as nearly as possible with that of the swarms, has not had that attention paid to it which the subject demands, as much of the success in the management of bees depends on this circumstance.

From blind instinct, bees endeavour to fill with combs whatever hive they are put into, before they begin to gather honey. Owing to this, when the hive is too large for its inhabitants, the time for collecting their winter store is spent in unprofitable labour: and starvation is the consequence. This evil also extends to occasioning late swarming the next summer; it being long before the hive becomes so filled with young bees as to produce a necessity for emigration, from which cause the season is too far advanced for the young colonies to procure a winter stock.

I should consider it a good rule in all cases, that the swarm should fill two-thirds of the hive. The hives used by me for my largest swarms, weighing from five to six pounds, will contain two pecks measure of corn, and will yield in a good season, eight Scots pints of honey, and for smaller swarms, in proportion. Hives with empty combs, are highly valuable for second swarms, as the bees are thereby enabled much sooner to begin collecting honey.

Situation for hives.—That the hives should be placed so as to receive the rays of the rising as well as meridian sun, is of considerable importance, heat and light appearing the principal stimulants to the bees. A hive so situated as not to be touched by the sun until some hours later than the other hives in the same gardon, would in the course of the season lose a proportional number of days labour. Hives should stand at some distance from walls or hedges. When lately building a garden wall, with a good exposure for bees, I ordered a number of nitches to be made, into which I afterwards put hives. These were, however, so much infested with snails in summer and mice in winter, that I was under the necessity of removing them to a more open situation.

Feeding of Bees.—Near the sea little honey is collected after the first week in August; but in high situations where the flowers are later, and heath abounds, the bees labor with advantage until the middle of September. These are proper periods, according to situation, for ascertaining if the hives intended to be kept contain a sufficient winter stock. The killing of the drones, (a very singular fact in the history of the bee, and which will be noticed hereafter,) perhaps marks this time with more precision.

If a large hive does not weigh thirty pounds, it will be necessary to allow it half a pound of honey, or the same quantity of soft sugar made into a syrup, for every pound that is deficient of that weight; and, in like proportion, to smaller hives. This work must not be delayed, that time may be given for the bees to make the deposit in their empty cells before they are rendered torpid by the cold.

I must here notice, that sugar simply dissolved in water (which is a common practice,) and sugar boiled with water into a syrup, form compounds very differently suited for the winter store of bees. When the former is wanted for their immediate nourishment, as in spring, it will answer equally as syrup; but if it be laid up as store, the heat of the hive quickly evaporating the water leaves the sugar in dry crystals, not to be acted upon by the trunks of the bees. I have known several instances of hives killed by hunger, while some pounds weight of sugar in this state remained in their cells. The boiling of sugar into syurp forms a closer combination with the water, by which it is prevented from flying off, and a consistence resembling that of honey retained. I have had frequent experience of hives not containing a pound of honey preserved in perfect health through the winter, with sugar so prepared, when given in proper time, and in sufficient quantity.

Covering the Hives.—Bees are evidently natives of a warm climate, a high temperature being absolutely necessary to their existence; and their continuing to live in hollow trees during the severe winters of Russia and America must depend on the heat produced from the great size of swarms which inhabit these abodes. From my own observation, the hives which are best covered during winter, always prosper most the following summer. In consequence about the end of harvest, I add to the thin covering of straw put on the hives at the time of swarming, a thick coat, and shut up the aperture through which the bees entered, so that only one can pass at a time. Indeed, as a very small portion of air is necessary for bees in their torpid state, it were better, during severe frosts, to be entirely shut up, as numbers of them are often lost from being enticed to quit the hive by the sunshine of a winter day. It will, however, be proper at times to remove by a crooked wire, or similar instru

ment, the dead bees and other filth, which the living at this season are unable to perform of themselves.

To hives whose stock of honey was sufficient for their maintenance, or those to which a sufficient quantity of sugar had been given for that purpose, no farther attention will be necessary until the breeding season arrives. This, in warm situations, generally takes place about the beginning, about a month after.

Owners of hives are often astonished, that at this advanced season, when their bees had, for weeks preceding, put on the most promising appearance, after a few days of rain, they became so weak and sickly as to be unable to leave the hive, and continue declining until they at last die.

From paying attention to this subject, I am confident that the cause is as follows. The young bees, for a short time previous to their leaving their cells, and some time after, require being fed with the same regularity that young birds are by their parents; and if the store in the hive be exhausted, and the weather such as not to admit of the working bees going abroad to collect food in sufficient quantity for themselves and their brood, the powerful principle of affection for their young, compels them to part with what is not enough for their support, at the expense of their own lives.

To prevent such accidents, I make it a rule, that if, during the breeding season, it rain for two successive days, to feed all the bees indiscriminately, as it would be difficult to ascertain those only who require it.

THE PLOUGH BOY.

ALBANY: SATURDAY, MARCH 18, 1820.

BEES.

The Society for the promotion of useful arts, in the state of New-York, have recently published the second part of their fourth volume, from the press of Messrs. Websters & Skinners. The volume is neatly and correctly printed. It contains a number of interesting articles, original and selected, which reflect credit on the talents, and discriminating taste of the Society. We extract from it, an essay on the management of Bees, accompanied by plates. But as the essay is too long for insertion entire in this day's *Plough Boy*, we have divided it into two numbers. The second number will appear in our next, together with the cuts, representing the form or construction of the author's bee-hives, which we have had engraved for the purpose.

INTERNAL IMPROVEMENT.

His Excellency the Governor has communicated to the Legislature, a very long and interesting Report of the Commissioners, appointed to report a plan for improving the Navigation of Hudson's river. We have neither time nor room for even an abstract of this important document But we earnestly recommend the perusal of it to every man who feels interested in the future prosperity of this city. This report is composed of several distinct articles, which go to illustrate the comparative merits of the damming system and that of a lateral canal, as means of improving the navigation of our river. That part of it which consists of a special report, made to the commissioners by E. C. GENET, we recommend in particular to the most serious attention of our fellow-citizens. Mr. Genet has proved conclusively to the mind of every unbiassed reader of common sense—

That the damming system is altogether ineffectual, and is consequently a reprehensible waste of the public money:

That a permanent lateral canal may be made, at an expense, which the event will justify, and which will render the river navigable to Albany for vessels of a burthen equal to any which is ever employed in commerce:

That Albany possesses, within its grasp, all the substantial means of a foreign commerce, and may, by the operation of the canal, become one of the first commercial cities in the Union.

Once more, we invite the disinterested and enterprising portion of this community, to peruse the document in question; and let them approach it with minds proposed for calm and impartial investigation, and superior to vulgar prejudice against the projector of the plan, as a foreigner, or a visionary speculator, as we have often heard stigmatised, a man whose mind is illuminated by genius, and stored with the richest fruits of erudition; a man who, so far from being a visionary, draws his conclusions from premises sanctioned by mathematical demonstration, and the experience of ages; a man, too, whose labours for the good of his adopted country, independent of the judicious and unexceptionable plan before us, richly entitle him to the public gratitude, and will, we trust, be duly appreciated by posterity.

If this report do not effectually DAM the ruinous and ridiculous DAMMING SYSTEM it will be because there are more secrets in our political economy, than are dreamt of in the philosophy of the honest multitude. We frankly confess, as advocating the agricultural interest, we feel zealously opposed to the damming system, satisfied, as we are, of its practical inutility, and its tendency eventually to destroy the navigation of the river altogether. But give us a deep and permanent canal, and the consequent extension of our commerce, and our agricultural population; and especially that of the eastern and western districts, will feel the benign effects of the improvement, to the latest ages.

NORTH-WESTERN EXPEDITION.

We are informed, (says an intelligent correspondent,) that an expedition is about to be dispatched by the United States government from Detroit, under the command of Gov. CASS, into the unexplored regions bordering the head of Lake Superior, and thence south along the foot of the Rocky Mountains, through a district of country in which it is supposed the Mississippi and the Missouri originate, to the mouth of the Yellow-stone, where it will form a junction with the Missouri expedition now encamped at the Council Bluffs. This measure is adopted in pursuance of that enlightened policy which dictated the establishment of a garrison at the falls of St. Antony, and which ordered a military force, accompanied by a scientific mission, to ascend the Missouri. Its principal objects are to extend our influence among the savage tribes, and to procure information respecting the geography, and the physical character and productions of that extensive region. It will visit many remote tribes of Indians heretofore unknown to us, with whom *talks* will be held, and a friendly intercourse established. Capt. Douglass of the corps of Engineers, will be attached to the command, for the purpose of making astronomical observations, and delineating the geographical features of the country. HENRY R. SCHOOLCRAFT, author of a work recently published on the mines, and natural history of the western country, is appointed to accompany the expedition, as mineralogist and geologist. Some other officers will be attached, and a small military force, which will leave Detroit as soon as the Lakes are open, and proceed through them in canoes as far as practicable, and thence continue the journey over land. There is no part of United America of which we know so little as the region thus proposed to be visited, and since the memorable journey of Lewis and Clark, no tour has been undertaken, either by the government or by individuals, which promises so great an acquisition to the knowledge, character, and resources of our country, and we look upon it as an additional evidence of the ability and intelligence which serve to mark the present administration of the general government. We may, at last, hope for some important details of the copper mines concerning which so much has been said and written since the days of Carver, but of which, in reality, so little is, with any certainty, known.

BURDEN'S PLOUGH.

The following is an extract of a letter from Dr. ALEXANDER COVENTRY, of Deerfield, Oneida county, to the President of the Board of Agriculture. We have only room to add, that we have full faith in Dr. COVENTRY's opinion; and that we shall in our next, or as soon as possible, exhibit an engraving of the plough which the Doctor recommends so forcibly, and with such laudable zeal.

"DEAR SIR,

"I take the liberty of enclosing an advertisement by HENRY BURDEN, the young man whom you favoured with an introductory line to me last summer. He fully justifies the character he brought to you from his friends in Scotland, as an ingenious mechanic and skilful agriculturist. The plate is an accurate representation of his plough from a type cut by himself (and his first essay.) He was prevailed to stop at Utica and construct a plough, which, notwithstanding the novelty of its appearance, and some prejudice from his being a stranger, gained from several competitors the premium offered by our society for the best constructed plough. It appeare that this plough would perform better work with half the team requisite for our common ploughs; in fact, being formed on mathematical and scienti-

fic principles, it is calculated to divide and turn over the soil with the least possible force; it enters and raises it like a wedge, while a surface of polished metal, wherever it comes in contact with the ground, lessens the friction. It was the result of several years' trial, by an excellent mechanic and good practical farmer. The plough is admirably calculated for strength, durability, and cheapness of repair, and considering our deficiency in that most essential instrument, it may be considered a most valuable acquisition to our country. I am confident we have no instrument equal to it in America, and doubt much if there be any superior in Europe. I have at present on my farm, ploughs of seven different kinds, imported, patent and wheel ploughs, but none of them will bear a comparison with Burden's. I have seen it work in various soils in all of which its performance was vastly superior to any that could be brought to compete, although we have those of various patentees. I have not the least doubt, that if this young man is encouraged, so as to persevere, his ploughs will in a few years be adopted by every good farmer in the United States, and New-York will have had the honour of furnishing to the union the most essential instrument to mankind, and of a construction superior to any now in use. Deeply sensible of your former kind attention, Mr. Burden begs leave to solicit your approbation and countenance in his effort; he would be highly gratified to furnish any gentleman near Albany with any of the instruments of husbandry, and would, if required, attend to put them in operation."

Weekly Summary.

The Maine and Missouri questions are at length settled. Both districts of country are admitted into the Union, as states; the former, from its population, requiring no restriction of slavery; and the latter admitted on the same terms —4 majority in the house of representatives in favour of the bill as it has passed. The bill, however, excludes slavery from all the rest of the territory of the United States, except the present territory of Arkansaw, and all the territory lying south of 36 1-2 deg. of N. latitude.

From a late report of the secretary of the treasury it appears that the banking capital in the United States, including the U. S. bank, and excluding all banks incorporated since 1317, amounts to $125,000,000.

From the Providence (R. I) Gazette, of the 6th inst. we learn that a society has been organized there for the encouragement of domestic industry, agriculture and manufactures.

From the same source of information we see a letter from Mr. S. Larned, formerly of Providence, but for several years a resident at Cadiz, whose opinion of the present insurrection in Spain is, that although measures have, in this instance, been conducted with infinitely more secrecy than the former abortive attempts to restore the constitution and the Cortes, still it is most probable that this attempt will end like the others. He says, however, that this movement has, for the present at least, completely put an end to the intended S. American expedition.

An Apprentice's Library is about to be established in New-York. In Boston it appears that the Apprentice's Library established there consists of about 1,000 volumes, consisting principally of books on the mechanic arts, of history, travels, and other useful knowledge, and on moral and religious subjects.

In the assembly of this state the bill for selling Grand Isle to Mr. Noah was rejected.

On the evening of the 25th ult. says the Hudson Bee, the body of a female infant, apparently but a few days old, was found on the ice, near the north bay of that city, very thinly covered, and partly under water, with a large stone fastened to its body. The verdict of the coroner's inquest was wilful murder.

Nine prisoners lately made their escape from the state-prison at Auburn.

On the 3d inst. 19 criminals made their escape from Baltimore jail, and by the last accounts but one of them had been retaken.

The boy, who had nearly accomplished the destruction of captain Sanford and family, of Litchfield co. Con. as mentioned in a former number of this paper, has been tried, and found not guilty—not on account of a want of sufficient proof of his guilt in putting the arsenic into the coffee drank by the family, but on account of his tender years, (being only 12 years old) and of course his probable ignorance of the effects of this poison. It appeared that captain S. kept arsenic for sale in his store. This case is eminently calculated to shew the propriety of making proper provision by law for restricting the sale of poisonous drugs; and for which purpose a bill has been introduced into the legislature of this state, during the present session.

It was lately stated in the National Intelligencer, that no provision had then been made for payment of pensions due on the 4th inst.

Died, on the 4th ult. near New-Orleans, Mr. Etienne Borrie, the first planter that succeeded in the culture of the sugar cane on the Mississippi.

About the middle of last month the rise of waters enabled the steam boats of the Ohio to get in motion for New-Orleans.

At Alexandria, Va. two coopers, (Potter and Davis) working together in the same shop, being both in love with a certain female, Davis, on the 11th ult. stabbed Potter with a knife, of which wound he died in about an hour. The murderer was secured.

On the 23d ult. a tornado was experienced at Richmond, Va. which did considerable damage by unroofing houses, blowing down chimneys, &c. One new house, on the dock, and a stable, were totally demolished; several others partially so; no lives lost.

Cure of deafness, and king's evil.—**"We have** received (says the editor of the Raleigh Register) from a correspondent in Mecklenburgh county, several attestations of the ability of Dr. David L. Green, of Bethlehem, Pennsylvania, effectually to cure deafness, where none of the parts of the ear are decayed, and the king's evil, however inveterate." Applications can be made to the doctor himself, by letter.

The French brig La Belle Adele in attempting to enter the port of Wilmington, N. C. on the 20th ult. struck on the bar, and was totally lost.

The canal bill, for connecting the Raritan and the Delaware, has passed the legislature of New-Jersey. The canal is to be of sufficient depth (9 feet) to admit coasting vessels to pass through it, and is to have but two locks, one at each end—the cost is calculated at $800,000.

On the 22d ult. the steam-boat Perseverance, with its cargo, was burnt, about 10 miles above Madison, (on the Ohio) the flames spreading so rapidly that nothing but the passengers was saved.

A Cincinnati paper, of the 3d ult. states that the preceding Saturday evening, the store of N. Hackey, of that place, had been robbed of gold and silver watches, jewelry, &c. to the amount of $18,000. Several had been committed who were strongly suspected of the theft.

An oil spring has been discovered in the county of Morgan, Ohio, which is stated to yield an inexhaustible quantity of this liquid. It sells for fifty cents a gallon. It is used for lamps, for currying leather, for mixing in medicines, &c. Whether it is calculated for mixing in paints had not been ascertained.

FOREIGN.

On the 29th January last, George III. king o England, slept with his fathers, and the late Prince Regent was proclaimed king, as George IV. The duke of Kent, one of the sons of the late king, also died about the same time.

From England and France, the news of the revolt in Spain is confirmed. The disaffected forces, called the *national army*, amounting to 24,000 men, had taken possession of Cadiz, where the constitution of the Cortes was proclaimed, and the oath to defend it administered to all parties, civil and military. Ferdinand had instructed general Freyre to confer with the rebel chiefs, and to offer them a constitution.

At Copenhagen further indignities have lately been offered the Jews; the windows of some of the most prominent among them were demolished; the civil authority had to interpose in their behalf.

The king of Prussia has prohibited the publication of any articles from the Dutch journals in his dominions.

The Pacha of Egypt, say the savans of France, is rendering himself quite distinguished for his encouragement of learned and ingenious men in his hitherto benighted dominions.

Considerable exertions are making by the Russian government to extend its settlements on the western shore of North America, north and south of our territory. At Norfolk sound it has erected a fortification mounting 100 cannon. The principal object would seem to be the engrossing of the East India trade.

We have a report that the island of Cuba has been ceded to Great-Britain, and that the Spanish governor, at Havanna, was preparing to put that place in a posture of defence, determined not to give up the place peaceably. From that place we have also information, dated 15th ult. that lieut. Percival, of the U. S. frigate Macedonian had arrived there, over land, from the Pacific ocean, with dispatches for our government.

Accounts from Cuba state that the ocean to the south of that island is infested with pirates, under the standard of the famous general McGregor.

From St. Thomas, of January 24th, we learn that about 2,000 English and Irish troops had lately arrived there, bound for the Main, in aid of the patriots. Another account says, that 14 of the provinces are now in posseesion of the patriots, and that only Carthagena and St. Martha were left remaining in possession of the royalists.

A late letter, received at New-York from Liverpool, says—"Lord Russell has given notice to bring into parliament a bill of reform, which has been sanctioned by ministers; but what will be the result no one knows. It is evident something must be done; and soon too."

In the fore part of January last, the British store ship Weymouth sailed with 470 settlers, men, women, and children, for the cape of Good Hope. Several parishes in Wiltshire conveyed men out in the ship.

By accounts from the south it appears that the army of Texas, whatever it may be, is still in existence, with general Long at its head. La Fitte, the late famous pirate, it seems is rear admiral of the navy of this formidable little assemblage of heroes; for, by their own accounts, they must be quite potent, they having defeated the Spaniards where the numbers opposed to them were ten to one!

By the last English accounts from St. Helena, it appears that Bonaparte was well, that he sometimes rides out, but seems desirous to shun all observation. He is so narrowly watched as to render it impossible for him to escape.—Madame Montholon had left the island, and it was probable he would soon be left alone. His new intended residence was not then completed. Provisions of all sorts were excessively high; turkies, 30 shillings a piece; geese, 40; and dunghill fowls, 18 shillings a pair; potatoes, 16 shillings per bushel; cheese 3, and butter 5, shillings per pound.

PRESENT PRICES OF COUNTRY PRODUCE IN THIS MARKET.

FLOUR AND GRAIN.—Superfine flour $6—Rye flour $2 75 per bbl.—Indian meal $1 50 cwt.—Buckwheat flour $1 25 to $1 75 cwt.—Wheat 87 cents to $1 6 bush.—Rye 54—Corn 44—Oats 31—Barley 75—Peas 50 to 62 1-2 per bush.

Beef, stall fed $6 cwt.—common beef $3 to $4 50—Pork $6 to 6 50—Mutton 5 to 6 cents per lb.—Ham 7 to 10 per lb.

Hay, average, 37 1-2 cents per cwt.

Butter 10 to 12 cents per lb.—Cheese, good, $6 per cwt.—Cider $ 2 to 2 50 p. bbl.—Potatoes 25 cents per bushel.—Turnips, ruta baga, 37 1-2 cent—white, 25 cents.

LUMBER.—Pine plank 14 cents—white p. do. 18—do. boards, good, $2 100 ft. com. $1 do.—Shingles, good, $1 50 per bundle.

Albany, March 17, 1820.

Lands for sale in the Genesee country, in the state of New-York.

THE LANDS belonging to the Pulteney family, in the counties of Ontario, Genesee, Steuben and Allegany, are offered for sale to actual settlers, at reasonable prices, and on a long credit. Among these lands are tracts of superior quality, situated in a healthy and prosperous country, which abounds with navigable lakes and rivers communicating with the Atlantic ocean; and its facilities for trade and transportation will be soon further encreased, by the great Erie canal now making through the heart of the country.

Persons desirous of becoming settlers on these lands, are requested to apply at the Pulteney land-offices, at Geneva, in the county of Ontario, and at Bath, in the county of Steuben.

ROBERT TROUP.

Geneva, Ontario county, March 6, 1820.

PRICE CURRENT.

Corrected Weekly, from the New-York General Price Current and Public Sales Report.

	Per	From D.	From C.	To D.	To C.	Remarks
ASHES, Pot	Ton	115		116	25	Dull.
—— Pearl		117				"
BEEF, Mess	bbl	10				
—— Prime		8		8	25	
—— Cargo		6	25			
BUTTER, first quality	lb		15		16	
—— for exportation			9		11	
CANDLES, mould			18		19	
—— Dipped			17			
—— Sperm.			44		45	
—— Wax			60			
CHEESE, American			6		7	
CHOCOLATE, New-York			18		25	
—— Boston, No. 1.			18		25	
—— Albany			20		25	
DOMESTIC GOODS,						
—— White shirting	yard		14		18	
—— Brown do			12		13	
—— 3-4 checks			16		18	
—— 7-8 do			21		22	
—— 4-4 do			24		27	
—— Stripes			16		18	
—— Plaids			16		20	
—— Bed-ticks			28		36	
—— Chambrays			14		15	
FEATHERS	lb		56		68	
FISH, Dry Cod	cwt	2	50	2	87	
—— scale		2				
—— Pickled Cod	bbl	3	50	4		
—— scale		2				
—— Salmon		15				
—— Fall mackrel No. 1		7	25	8		
—— —— No. 2		5	50	6		
—— —— No. 3		4	50	5		
—— Southern shad No. 1		5	50	6		
—— Connecticut mess shad		10	50	11		
—— Herrings		2	50	3		
FLAX	lb		16		18	
FLAX-SEED, clean	cask	13		13	50	
—— rough		12		13		
FLOUR & GRAIN						
—— New-York superfine	1 b.	5		5	12	
—— Philadelphia		5	75	6		
—— Baltimore		5	75	6		
—— Richmond		5	50			
—— Middlings, fine		4				
—— Rye flour		3				
—— Indian meal		3		3	25	
—— —— in hogsheads	200	18		19		
—— Wheat, North River	bus.		87	1		
—— —— Southern, new		1				
—— Barley			65		68	
—— Oats			32		34	
GLASS, Amer. 7 by 9	box	9				
—— 8 10		10				
—— 10 12		12		12	50	
GLUE	lb		12		13	
GUN-POWDER, Amer.	25lb	5		6		
—— Cannon		6		6	50	
HAMS, Virginia	lb		10		12	
—— North River			9		11	
HEMP, Water rot	Ton					None.
—— Dew rot		150				Scarce.
HOGSLARD	lb		11		12	
HONEY			15		16	
HOPS 1st and 2d sort			6		8	
IRON, American	Ton	85		90		
LUMBER, Boards, oak	Mft	18				
—— North River pine		16		17		
—— Yellow pine		18		20		
—— Albany pineb'ds	pie.		18			
—— Scantling, pine	Mft	14		15		
—— —— oak		25				
—— Oak timber	sd ft		20		25	
—— Shingles, cypress	1000	4				
—— —— pine		3		3	50	
—— Staves, pipe		55				
—— —— hhd		44				
—— —— bbl		28				
—— —— R O hhd		26				
—— Hhd heading		50				
—— —— hoops		25		30		
OIL, Linseed	gal	1				
PLAISTER of PARIS	Ton	4	50			
PORK, Cargo		9	50	10		
—— Prime		11	50	12		
—— Mess		13	50	14		
SOAP White			13		15	
—— Brown			9		11	
WAX, Bees, white			55		60	
—— —— yellow			31		32	

New-York, March 10, 1820.

STATEMENT of the aggregate of the valuations of real and personal estates in the several counties in the state of New-York, as far as they have been returned to the Comptroller's Office, for the years 1817, 1818, and 1819.

Counties.	*Year* 1817.	*Year* 1818.	*Year* 1819.
Albany	14,113,004	13,986,143	7,633,881
Allegany	792,545	895,882	822,946
Broome	2,395,431	2,397,640	2,445,943
Cayuga	4,578,682	4,532,682	4,486,314
Chatauque	1,705,533	1,698,753	1,698,301
Chenango	4,072,253	4,057,165	4,062,996
Clinton	1,585,836	1,559,545	1,454,516
Columbia	10,825,868	10,690,400	6,758,428
Cortland	2,215,723	1,211,405	1,755,395
Cattaraugus	1,805,960	1,878,842	1,800,080
Delaware	3,912,932	3,866,541	3,890,456
Dutchess	17,818,177	17,909,725	16,030,583
Essex	1,115,835	1,122,054	999,575
Franklin	706,972	714,186	714,157
Genesee	6,647,650	6,811,708	6,801,027
Greene	4,433,874	4,451,022	4,395,874
Herkimer	5,280,024	5,234,625	5,000,000
Jefferson	3,588,829	3,570,221	3,064,002
Kings	4,907,122	4,925,002	3,752,326
Lewis	1,696,981	1,694,349	1,728,313
Madison	4,322,637	4,417,522	4,407,651
Montgomery	7,861,621	7,866,084	5,856,407
New-York	78,995,735	80,254,091	79,113,061
Niagara	3,931,240	4,160,597	4,000,000
Oneida	9,240,228	9,157,074	8,551,972
Onondaga	3,725,295	3,736,994	3,624,109
Ontario	14,071,491	12,300,128	10,287,727
Orange	7,883,829	7,830,530	7,881,135
Oswego	1,395,235	1,402,174	1,425,619
Otsego	6,684,510	6,479,131	6,174,419
Putnam	2,008,413	2,017,168	2,033,075
Queens	7,591,974	7,570,294	5,895,60
Rensselaer	10,324,860	10,215,331	7,299,627
Rockland	2,209,265	2,209,265	2,200,565
Richmond	872,966	854,814	674,083
Saratoga	7,568,331	7,533,457	6,596,010
Schenectady	2,380 184	2,314,157	1,970,163
Schoharie	3,813,129	3,815,903	3,824,794
Seneca	2,752,867	2,717,914	3,192,955
St. Lawrence	3,031,465	3,028,198	3,000,000
Steuben	2,018,247	2,015,713	2,050,762
Suffolk	6,676,267	6,620,281	5,327,392
Sullivan	1,775,550	1,768,839	1,592,787
Tioga	2,315,526	2,498,641	2,505,349
Tompkins	2,266,079	2,267,414	1,886,634
Ulster	5,034,608	5,015,714	3,389,586
Warren	1,323,773	1,356,221	1,364,145
Washington, (no returns for 1818, stated for 1817)	7,901,064	7,901,064	5,932,053
Westchester	11,290,403	11,470,842	10,512,275
	315,370,838	314,913,695	281,862,793

Summary.

[OMITTED LAST WEEK.]

Important, if true.—A late London paper states that the emperor Alexander has laid the foundation of a representative government in his vast empire. According to the plan, the civilized parts of the empire, whether in Europe or Asia, are to be divided into ten governments, which are to be provincial states, and these again are to choose a general representative body, to consist of two houses.

Accounts are given of a French traveller, now in Egypt, who has discovered the remains of an ancient city, situated in the mountains, in latitude 25, and about nine hours journey from the Red sea. About 800 houses are still in existence. Among the ruins are found temples dedicated to various divinities. There are 11 statues, and various ruins of others. He has also discovered the ancient stations that were appointed on the route through the desert, from the Red sea to the Nile, when the trade of India was carried on, in part through that sea. These stations are at the regular distances of 9 hours travel between each. The situation is also said to be discovered of the Emerald mine, of which no certain knowledge was had for ages.

A London paper says that interesting advices have been received from China, through Mr. Milne, of the London Missionary Society, resident there. The country is stated to be on the eve of a revolution; it is filled with secret societies, which numerous executions cannot put down; one hundred per month being executed in the single province of Canton. The names of the societies are ludicrous enough, such as white jacket's, red beard's, short sword's, &c. A dreadful earthquake, and a famine have lately occurred there, which the superstitious natives consider as portending the fall of the present dynasty.

In England, a new invented gun has lately been presented for the inspection of the prince regent, and others, which is calculated to fire off seven charges in succession. The gun is said to be not essentially heavier than guns of the common sort. It is composed of one barrel, of the usual length, through which all the charges are let off in succession. There are also seven barrels of sufficient lengths to contain each a charge, and these are successively brought so as to be fired off through the long barrel by the mere act of cocking the gun, and the shutting the pan, after each discharge serves to prime it again. The long barrel may be of the rifle bore if requisite. Guns of a description somewhat similar have been invented in this country—excellent things for destroying the greatest possible number of lives.

Sale of Land for Taxes.

State of New-York—Comptroller's Office.

PUBLIC Notice is hereby given, that lists of certain lands liable to be sold for taxes, have been forwarded to the several counties in this state, in order to be deposited in the several county treasurers' and town clerks' offices, respectively, for the information of all persons concerned; and that the said lists may be examined at either of the said offices, at all reasonable hours: And notice is hereby also given, that on *Thursday, the seventh day of October next*, at ten o'clock in the forenoon, at the capitol, in the city of Albany, and on the next succeeding days, I will sell at public auction to the highest bidder, so much of each lot, piece or parcel of land mentioned and described in the said lists, as will be necessary to pay all taxes, interest and charges now due, or that may grow and may be due thereon at the time of sale.

The conditions of sale will be, that the purchasers within forty-eight hours after the sale, pay the purchase moneys and receive certificates of their purchases; and that after the expiration of two years from the date of their certificates, they receive conveyances for the lands purchased by them respectively, unless the owners, or those claiming to be such, of the lands so purchased, shall, previous to the expiration of the said two years, pay to the comptroller, for the use of the said purchasers, their heirs and assigns, the amount of the purchase moneys, with interest, at the rate of twenty per centum per annum.—The lands sold to be subject to all claims of the state thereon. And in case any land to be purchased at the said sale and that may be conveyed in pursuance thereof, shall at the time of conveyance be in the actual possession and occupancy of any person or persons, the title of the purchaser shall then and in that case be subject to the stipulations and provisions of the fifth section of the act, entitled "an act to repeal in part the act, entitled "an act providing more effectually to ascertain and determine the true value of real estates within this state, and for other purposes," and further to amend the act for the assessment and collection of taxes" passed April 13, 1819.

ARCH'D. M'INTYRE, Comptroller.

Albany, May 27th, 1819.

☞ Persons who may have made payments into the treasury for taxes, and omitted to have their receipts presented at the comptroller's office to have them entered and countersigned as required by law, are advised to present them in order to be so entered and countersigned before the day of sale; or that in case of failing to do so, their lands will be sold, and they thereafter be deprived of the benefit of all such payments.

Payments for taxes cannot be received on the days of sale, nor for two days prior to the sale.

☞ **The above mentioned sale is postponed untill Tuesday, the eighth day of February next, at ten o'clock in the forenoon.**

ARCH'D M'INTYRE, *Comptroller.*

Albany, October 2, 1819.

☞ **Agreeably to an act of the legislature, passed this day, the above sale is further postponed until the first Tuesday of February, in the year 1821, to be then held at the same place and hour.** ARCHD. M'INTYRE, *Comptr.*

Albany, February 4, 1820.

ALBANY: PRINTED FOR THE EDITOR,

BY JOHN O. COLE.

☞ COMMUNICATIONS, SUBSCRIPTIONS, and ADVERTISEMENTS, for this paper, and PRINTING JOBS, of every description, which will be neatly executed, at fair prices, received at the Post Office. All letters from abroad, directed to the Postmaster, Albany, will be duly attended to.

TERMS.

THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.